

**REMARKS/ARGUMENTS**

The Office Action mailed June 9, 2005, has been received and its contents carefully considered. Applicants initially thank the Examiner for allowance of Claims 28-39 and 53. Reconsideration and withdrawal of the outstanding rejections are respectfully requested in view of the foregoing amendments and the following remarks.

In the final Office Action mailed June 9, 2005, claims 40, 42-48, and 50-52 stand rejected. Applicants have thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein. The following remarks are believed to be fully responsive to the final Office Action. All the pending claims at issue are believed to be patentable.

Claims 40 and 46 are presently amended. No claims are added. Claims 1-27, 41, and 49 have been previously cancelled. Claims 28-39 and 53 are allowed. As such, claims 28-40, 42-48, and 50-53 remain pending.

**CLAIM REJECTION – 35 U.S.C. § 102(e)**

Claims 40, 42-48, and 50-52 are rejected under 35 U.S.C. § 102(e) as being anticipated by US Patent No. 6,4491,273 to King et al. Specifically, as to Claim 40, the final Office Action states that King et al. discloses “a first arm 24 segment includ[ing] a quick connect member 82 thereon and a second arm 26 segment includ[ing] a quick connect adaptor 84 thereon” and a “holding component including a ball 102 (ball shaped member 102 having a ball shaped surface) ... the ball having a diameter that is compressible ... wherein the diameter of the ball is movable between first and second positions by supplying and discontinuing a supply of pressurized gas through the first and second arm segments to the ball (Figures 1-4).”

Applicants respectfully disagree with the Office Action's characterization of King as set forth above, and note that King does not include at least two elements as recited in amended Claim 40: (A) the quick connect member and quick connect adapter that reversibly couple and decouple the two arm segments of Applicant's invention, and (B) a compressible ball-shaped member having an opening therethrough and a diameter that is movable in response to a supply of gas into the ball-shaped member. To emphasize these two differences, and to make the claims more clear, Applicants have amended independent Claims 40 and 46.

#### **CLAIM 40**

Specifically, Claim 40 has been amended herein to include the following three limitations: (i) "the first and second arm segments being reversibly attachable and detachable from each other via interoperation of the quick connect member and the quick connect adapter;" (ii) the "ball-shaped member having a substantially spherically shaped outer surface;" and (iii) the "supply of pressurized gas through the first and second arm segments into the ball-shaped member." (Underlined portions being those added in the current amendment to Claim 40). King does not teach or disclose any of the foregoing limitations recited in amended Claim 40.

First, the mid-joint 16 of King does include an interoperable quick connect member and quick connect adapter that allows the two arms 24 and 26 of King to become completely detachable from each other. Rather, the arrangement of sleeve 82 (dubbed the "quick connect member" in the Office Action) and upper collar 84 (dubbed the "quick connect adaptor" in the Office Action) in mid-joint 16 serves to lock and unlock the rotational movement of the arms 24 and 26 relative to each other, and does not allow the arms to be completely separated from each other. The locking occurs when fluid pressure is supplied to the housing 78 of mid-joint 16, pushing the sleeve 82 against the seat 86 formed by the interior surface of collar 84. "When

sleeve 82 is urged upwardly, the upper mating surface of sleeve 82 contacts with seat 86 and thereby prevents relative movement between sleeve 82 and seat 86....the mating engagement of sleeve 82 with seat 86 prevents the relative *rotational* movement of second rigid member 26 with respect to first rigid member 24.” (King, col. 5, lines 50-58, emphasis added). The operation of the mid-joint 16 in King therefore acts as a rotational locking mechanism, and not as a means for attaching or detaching the two arm segments.

Therefore, King does not teach or disclose “the first and second arm segments being reversibly attachable and detachable from each other via interoperation of the quick connect member and the quick connect adapter” as recited in amended Claim 40. Instead, King only teaches a mechanism whereby the arms are rotatably locked in relation to each other, not a mechanism whereby the arms can be reversibly attached or detached. For this reason alone, Claim 40 is believed to be novel over the teachings of King.

King also lacks a “ball-shaped member *having a substantially spherically shaped outer surface*...the ball having a diameter that is *compressible* ... wherein the diameter of the ball-shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas through the first and second arm segments *into* the ball-shaped member,” as recited in amended Claim 40. (Emphasis added) In the Office Action, it was stated that the “ball 102 (ball shaped member 102 having a ball shaped surface)” in King corresponded to the “ball” member recited in Claim 40. Applicants respectfully disagree with this characterization. King describes element 102 disclosed therein as a “piston 102” having a “seat 104 dimensioned to seat with ball 94.” (King, col. 6, lines 13-14). As shown in FIG. 4 of King, the piston 102 may have a concave recess that mates with a ball member 94, but the piston 102 itself is not what one of ordinary skill in the art would understand to be a “ball.” Instead, the

actual corresponding ball member in King is the “ball 94.” (See FIG. 4 in King). To clarify and emphasize this, Applicants have further defined the “ball” member recited in amended Claim 40 to be a “ball-shaped member having a substantially spherically shaped outer surface” so as to clearly distinguish said member from the piston 102 of King.

As such, the only member in King which could correspond to the ball-shaped member recited in amended Claim 40 is the ball 94, shown clearly in FIG. 4 in King. Yet ball 94 in King is a solid, rigid object, and is not “compressible” such that “the diameter of the ball-shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas ... *into* the ball-shaped member,” as recited in amended Claim 40. Applicants emphasize that the present invention involves the supply of gas into and through the ball-shaped member. This causes the non-solid interior of the ball-shaped member recited in Claim 40 to be compressible such that it expands or contracts in diameter. This does not occur in King. King only teaches that “pressure exerted by fluid contained in chamber 108 will cause a force to be produced to urge piston seat 104 toward collar seat 100 to *grippingly engage* ball 94 therebetween. Increasing pressure of the fluid in chamber 108 will cause joint 18 to become in a locked state due to increasing *frictional engagement* of seats 100, 104 to ball 94.” (King, col. 6, lines 18-24, emphasis added). Thus, ball 94 is only compressed by solid elements around it. This allows for the rotational movement of a mount 96 attached to ball 94 to be restricted. Ball 94 in King does not have a supply of fluid that passes into the ball, contrary to what is recited in amended Claim 40. Accordingly, for at least this reason, Claim 40, as amended, is believed to be novel over the teachings of King.

Therefore, for at least the reasons set forth above, namely, that King does not teach or disclose “the first and second arm segments being reversibly attachable and detachable from

each other via interoperation of the quick connect member and the quick connect adapter,” and that “the diameter of the ball-shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas … into the ball-shaped member,” as recited in amended Claim 40, Claim 40 is believed to be allowable over King. Applicants therefore respectfully request that the rejection with regard to Claim 40 be withdrawn.

## **CLAIM 46**

As to Claim 46, the final Office Action states that King discloses “a quick connect member 82 attached to a first component 24; and a quick connect adapter 84 attached to a second component 26 … wherein the quick connect member is shaped to be insertable into the quick connect adapter to bring the first component into communication with the second component and to allow a gas to flow therethrough,” and “a ball shaped member 102 (ball shaped member 102 having a ball shaped surface) wherein the diameter of the ball shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas to the ball shaped member (Figure 1-4).” For the same reasons set forth above with respect to amended Claim 40, Claim 46, as amended herein, is also not anticipated by King.

First, King does not teach or disclose “the first and second components being reversibly attachable and detachable from each other via interoperation of the quick connect member and the quick connect adapter,” as is recited in amended Claim 46. Second, King does not have a “a ball shaped member having a substantially spherically shaped outer surface wherein the diameter of the ball shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas into the ball shaped member.” (Underlined portions being those added in the current amendment to Claim 46; italics added for emphasis). Each of

these limitations were also discussed above with respect to amended Claim 40. King does not practice these limitations because the arms members 24 and 26 in King are not attachable and detachable but are instead only rotationally lockable relative to each other via operation of mid-joint 16. Furthermore, the only ball-shaped member in King is element 94, which is a solid object and does not expand or contract in diameter in response to a supply of gas into the ball 94.

Accordingly, for at least the reasons set forth above, namely, that King does not teach or disclose “the first and second components being reversibly attachable and detachable from each other via interoperation of the quick connect member and the quick connect adapter,” and that “the diameter of the ball-shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas into the ball-shaped member,” as recited in amended Claim 46, Claim 46 is believed to be allowable over King. Applicants therefore respectfully request that the rejection with regard to Claim 46 be withdrawn.

Dependent Claims 42-45, 47-48, and 50-52 depend directly or indirectly from independent Claims 40 or 46. These claims recite additional limitations which, in conformity with the features of their corresponding independent claim, are not disclosed or suggested by the art of record. The dependent claims are therefore believed patentable. Therefore, applicants therefore respectfully request that the rejection with regard to Claims 42-45, 47-48, and 50-52 be withdrawn.

## **CONCLUSION**

Accordingly, Applicants respectfully submit that Claims 40, 41-48, and 50-52 are allowable. In the Office Action, Claims 28-39 and 53 have been stated as allowed. In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. If it is believed that the application is not in condition for allowance, the Examiner is requested to

Docket No. 59472.22460  
Application No. 10/720,143  
Customer No. 30734

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contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 with reference to Attorney Docket No. 59472.22460.

Respectfully submitted,

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